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IN THE UNITED STATES PATENT & TRADEMARK OFFICE

IN RE APPLICATION OF :  
SHOKO ARAKI, ET AL. : EXAMINER: VO, HIEN ZUAN  
SERIAL NO: 10/539,609 :  
FILED: JUNE 17, 2005 : GROUP ART UNIT: 2863  
FOR: SIGNAL SEPARATION METHOD, :  
SIGNAL SEPARATION DEVICE, AND  
RECORDING MEDIUM

**COMMENTS ON STATEMENT OF REASONS FOR ALLOWANCE**

MAIL STOP ISSUE FEE  
COMMISSIONER FOR PATENTS  
ALEXANDRIA, VIRGINIA 22313

SIR:

Applicants acknowledge with appreciation the indication of Allowability of the claimed invention. In response to the Examiner's Statement of Reasons for Allowance in the Notice of Allowance of May 19, 2008, Applicants respectfully submit the following comments.

In the Examiner's Statement of Reasons for Allowance on page 2 of the Notice of Allowance mailed May 19, 2008, paragraphs 4 and 5 state in part:

4. For claims 1, 10, 21, 22, 26-27, the primary reason for allowance of claims are a procedure that uses said frequency-domain signal values to calculate at each frequency the relative values of the observed values between said sensors (including mapping these relative values), a procedure that clusters said relative values into N clusters, a procedure that calculates a representative value for each of said clusters, a procedure that uses said representative values to generate a mask for the purpose of extracting, from said frequency-domain signal values, mixed signal values comprising the signals emitted from V ( $2 \leq V \leq M$ ) signal sources, a procedure that uses said mask to extract said mixed signal values from said frequency-

domain signal values, and a procedure that separates and extracts the values of  $V$  signals from said mixed signal values.

5. For claims 11, 12, 15, 23-25, 28-30, the primary reason for the allowance of claims are a procedure that transforms the observed signal values  $x_1(t), \dots, x_M(t)$  observed by said sensors into frequency-domain signal values  $X_1(f, m), \dots, X_M(f, m)$ , a procedure that clusters first vectors  $X(f, m) = [X_1(f, m), \dots, X_M(f, m)]$  comprising said frequency-domain signal values  $X_1(f, m), \dots, X_M(f, m)$  into  $N$  clusters  $C_i(f)$  ( $i=1, \dots, N$ ) at each frequency  $f$ , a procedure that calculates second vectors  $a_i(f)$  to represent each said cluster  $C_i(f)$ , a procedure that extracts  $V$  ( $1 \leq V \leq M$ ) third vectors  $a_p(f)$  ( $p=1, \dots, V$ ) from the second vector  $a_i(f)$ , a procedure that generates a mask  $M(f, m)$  represented by the formula 55, where  $G_k$  is the set of said third vectors  $a_p(f)$ ,  $G_k^c$  is the complementary set of  $G_k$ , and  $D(\alpha, \beta)$  is the Mahanalobis square distance between the vectors  $\alpha$  and  $\beta$ , and a procedure that extracts the signal values emitted from  $V$  of said signal sources by calculating the product of said mask  $M(f, m)$  and said first vectors  $X(f, m)$ .

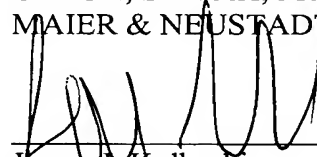
Although the above comment in paragraph 4 may be accurate with respect to Claims 1, 21 and 26, it is respectfully noted that independent Claims 10, 22 and 27 do not include all of the elements recited above. For example, Claims 10, 22 and 27 recite “a mask function that takes a high level value...and takes a low level value” based on relative values that may or may not be within a prescribed range and not “a mask for the purpose of extracting, from said frequency-domain signal values, mixed signal values”.

Furthermore, although the above comment in paragraph 5 may be accurate with respect to Claims 11, 23 and 28, it is respectfully noted that independent Claims 12, 15, 24, 25, 29 and 30 do not include all of the elements recited above. For example, independent Claims 12, 24 and 29 recite judging “whether or not said first vectors satisfy the relationship” described in a particular formula, and Claims 15, 25 and 30 recite calculating “an  $N$ -row x  $M$ -column separation matrix” and not “a procedure that generates a mask” represented by a particular formula.

Accordingly, it is respectfully submitted that the above quoted statements apply only to independent Claims 1, 11, 21, 23, 26 and 28 (and claims dependent therefrom), and not to independent Claims 10, 12, 15, 22, 24, 25, 27, 29 and 30 (and claims dependent therefrom).

Respectfully submitted,

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